# *ABC of complementary medicine*
# Herbal medicine

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## Background

The use of plants for healing purposes predates human history and forms the origin of much modern medicine. Many conventional drugs originate from plant sources: a century ago, most of the few effective drugs were plant based. Examples include aspirin (from willow bark), digoxin (from foxglove), quinine (from cinchona bark), and morphine (from the opium poppy). The development of drugs from plants continues, with drug companies engaged in large scale pharmacological screening of herbs.

Chinese herbalism is the most prevalent of the ancient herbal traditions currently practised in Britain. It is based on concepts of yin and yang and of Qi energy. Chinese herbs are ascribed qualities such as "cooling" (yin) or "stimulating" (yang) and used, often in combination, according to the deficiencies or excesses of these qualities in the patient.

Modern Western herbalism emphasises the effects of herbs on individual body systems. For example, herbs may be used for their supposed anti-inflammatory, haemostatic, expectorant, antispasmodic, or immunostimulatory properties.

Spending on herbal products in the United Kingdom is over £40m a year, mainly from self prescription of over the counter products. This type of herbal drug use is typically based on a simple matching of a particular herb to particular diseases or symptoms—such as valerian (*Valeriana officinalis*) for sleep disturbance. Originally confined to health food shops, herbal remedies are now marketed in many conventional pharmacies.

Until a century ago most effective medicines were plant based

Chinese herbalism is the most prevalent of the traditional herbal practices in Britain

**Differences from conventional drug use**

Although superficially similar, herbal medicine and conventional pharmacotherapy have three important differences:

*Use of whole plants*—Herbalists generally use unpurified plant extracts containing several different constituents. They claim that these can work together synergistically so that the effect of the whole herb is greater than the summed effects of its components. They also claim that toxicity is reduced when whole herbs are used instead of isolated active ingredients ("buffering"). Although two samples of a particular herbal drug may contain constituent compounds in different proportions, practitioners claim that this does not generally cause clinical problems. There is some experimental evidence for synergy and buffering in certain whole plant preparations, but how far this is generalisable to all herbal products is not known.

*Herb combining*—Often, several different herbs are used together. Practitioners say that the principles of synergy and buffering apply to combinations of plants and claim that combining herbs improves efficacy and reduces adverse effects. This contrasts with conventional practice, where polypharmacy is generally avoided whenever possible.

*Diagnosis*—Herbal practitioners use different diagnostic principles from conventional practitioners. For example, when treating arthritis, they might observe "underfunctioning of a patient's systems of elimination" and decide that the arthritis results from "an accumulation of metabolic waste products." A diuretic, choleretic, or laxative combination of herbs might then be prescribed alongside herbs with anti-inflammatory properties.

**Example of a herbal prescription for osteoarthritis**

- Turmeric (*Curcuma longa*) tincture 20 ml—For anti-inflammatory activity and to improve local circulation at affected joints
- Devil's claw (*Harpagophytum procumbens*) tincture 30 ml—For anti-inflammatory activity and general wellbeing
- Ginseng (*Panax* spp) tincture 10 ml—For weakness and exhaustion
- White willow (*Salix alba*) tincture 20 ml—For anti-inflammatory activity
- Liquorice (*Glycyrrhiza glabra*) 5 ml—For anti-inflammatory activity and to improve palatability and absorption of herbal medicine
- Oats (*Avena sativa*) 15 ml—To aid sleep and for general wellbeing

## What happens during a treatment?

Herbal practitioners take extensive case histories and perform a physical examination. Patients are asked to describe their medical history and current symptoms. Particular attention is paid to the state of everyday processes such as appetite, digestion, urination, defecation, and sleep. Patients are then prescribed individualised combinations of herbs. These are usually taken as tinctures (alcoholic extracts) or teas. Syrups, pills, capsules, ointments, and compresses may also be used. Oral preparations can taste and smell unpleasant.

In addition to the herbal prescription, practitioners may work with their clients to improve diet and other lifestyle factors such as exercise and emotional issues. Follow up appointments occur after two to four weeks. Progress is reviewed and changes made to drugs, doses, or regimen as necessary.

Herbal remedies are available in a wide variety of formulations

## Therapeutic scope

Although herbal preparations are widely used as self medication for acute conditions, practitioners of herbal medicine tend to concentrate on treating chronic conditions. A typical caseload might include asthma, eczema, premenstrual syndrome, rheumatoid arthritis, migraine, menopausal symptoms, chronic fatigue, and irritable bowel syndrome. Herbalists do not tend to treat acute mental or musculoskeletal disorders.

The aim of herbal treatment is usually to produce persisting improvements in wellbeing. Practitioners often talk in terms of trying to treat the "underlying cause" of disease and may prescribe herbs aimed at correcting patterns of dysfunction rather than targeting the presenting symptoms. That said, many practitioners prescribe symptomatically as well, such as giving a remedy to aid sleep in a patient with chronic pain.

### Research evidence

In laboratory settings plant extracts have been shown to have a variety of pharmacological effects, including anti-inflammatory, vasodilatory, antimicrobial, anticonvulsant, sedative, and antipyretic effects. In a typical study an infusion of lemon grass leaves produced a dose dependent reduction of experimentally induced hyperalgesia in rat.

Human studies also confirm specific therapeutic effects of particular herbs: randomised controlled trials support the use of ginger for treating nausea and vomiting, feverfew for migraine prophylaxis, and ginkgo for cerebral insufficiency and dementia. The best known evidence about a herbal product concerns St John's wort (*Hypericum perforatum*) for treating mild to moderate depression. A systematic review of 23 randomised controlled trials found the herb to be significantly superior to placebo and therapeutically equivalent to, but with fewer side effects than, antidepressants such as amitriptyline.

However, there is still very little evidence on the effectiveness of herbalism as practised—that is, using principles such as combining herbs and unconventional diagnosis. Almost no randomised studies have investigated herbal practitioners treating as they would in everyday clinical work. Perhaps the closest attempt evaluated a traditional Chinese herbal treatment of eczema. As prescriptions depend on patients' exact presentations, only those with widespread, non-exudative eczema were included. Eighty seven adults and children, refractory to conventional first and second line treatment, were randomised to a crossover study that compared a preparation of about 10 Chinese herbs with a placebo consisting of herbs thought to be ineffective for eczema. Highly significant reductions in eczema scores were associated with active

A substantial evidence base supports the use of St John's wort for treating mild to moderate depression

**Key studies of efficacy**

**Systematic reviews**

- Linde K, Ramirez G, Mulrow CD, Pauls A, Weidenhammer W. St John's wort for depression—an overview and meta-analysis of randomised clinical trials. *BMJ* 1996;313:253-8
- Melchart D, Linde K, Fischer P, Kaesmayr J. Echinacea for preventing and treating the common cold. In: Cochrane Collaboration. *The Cochrane Library*. Issue 3. Oxford: Update Software, 1999
- Wilt TJ, Ishani A, Stark G, MacDonald R, Lau J, Mulrow C. Saw palmetto extracts for treatment of benign prostatic hyperplasia: a systematic review. *JAMA* 1998;280:1604-9

**Randomised controlled trials**

- Sheehan MP, Rustin MH, Atherton DJ, Buckley C, Harris DW, Brostoff J, et al. Efficacy of traditional Chinese herbal therapy in adult atopic dermatitis. *Lancet* 1992;340:13-7

The dramatic responses of some patients' eczema after treatment by Dr Luo at the London Chinese Medical Centre prompted dermatologists to undertake randomised controlled trials of the herbal treatment

treatment but not with placebo. At long term follow up, over half of the adults (12/21) and over 75% of the children (18/23) who continued treatment had a greater than 90% reduction in eczema scores.

## Safety

Many plants are highly toxic. Herbal medicine probably presents a greater risk of adverse effects and interactions than any other complementary therapy. There are case reports of serious adverse events after administration of herbal products. In most cases the herbs involved were self prescribed and bought over the counter or obtained from a source other than a registered practitioner. In the most notorious instance, several women developed rapidly progressive interstitial renal fibrosis after taking Chinese herbs prescribed by a slimming clinic.

As well as their direct pharmacological effects, herbal products may be contaminated, adulterated, or misidentified. Adverse effects seem more common with herbs imported from outside Europe and north America. In general, patients taking herbal preparations regularly should receive careful follow up and have access to appropriate biochemical monitoring.

As with many complementary therapies, information on the prevalence of adverse effects is limited. The National Institute of Medical Herbalists and the University of Exeter have begun to operate a type of "yellow card" system to collect and collate adverse events reported by herbalists. The National Poisons Unit has set up a database to record adverse events and interactions, but, without a more systematic reporting scheme, the incidence of such events will remain unknown.

Interactions of herbal products with conventional drugs have been described. Some well characterised interactions exist, and competent medical herbalists are trained to take a detailed drug history and avoid these. Other interactions are not clearly defined. Problems are more likely to occur with less well qualified practitioners, more unusual combinations of agents, patients taking several conventional drugs, and those who self prescribe herbal medicines. If patients are taking conventional drugs, herbal preparations should be used with extreme caution and only on the advice of a herbalist familiar with the relevant conventional pharmacology.

**Sources of information on safety of herbal products**

**EXTRACT database**
Centre for Complementary Health Studies, Exeter University, Exeter EX4 4RG. Tel: 01392 264496

**PhytoNet Home Page www.exeter.ac.uk/phytonet/**
An information resource concerning development, manufacture, regulation, and surveillance of herbal medicines

**National poisons units**
Contact details for poisons information centres available in the *British National Formulary*

Several herbal products interact with conventional drugs—such as echinacea (left) with anabolic steroids and valerian (right) with barbiturates

**Important potential interactions between herbal preparations and conventional drugs**

| Herb | Conventional drug | Potential problem |
|---|---|---|
| Echinacea used for >8 weeks | Anabolic steroids, methotrexate, amiodarone, ketoconazole | Hepatotoxicity |
| Feverfew | Non-steroidal anti-inflammatory drugs | Inhibition of herbal effect |
| Feverfew, garlic, ginseng, gingko, ginger | Warfarin | Altered bleeding time |
| Ginseng | Phenelzine sulphate | Headache, tremulousness, manic episodes |
| Ginseng | Oestrogens, corticosteroids | Additive effects |
| St John's wort | Monoamine oxidase inhibitor and serotonin reuptake inhibitor antidepressants | Mechanism of herbal effect uncertain. Insufficient evidence of safety with concomitant use—therefore not advised |
| Valerian | Barbiturates | Additive effects, excessive sedation |
| Kyushin, liquorice, plantain, uzara root, hawthorn, ginseng | Digoxin | Interference with pharmacodynamics and drug level monitoring |
| Evening primrose oil, borage | Anticonvulsants | Lowered seizure threshold |
| Shankapulshpi (Ayurvedic preparation) | Phenytoin | Reduced drug levels, inhibition of drug effect |
| Kava | Benzodiazepines | Additive sedative effects, coma |
| Echinacea, zinc (immunostimulants) | Immunosuppressants (such as corticosteroids, cyclosporin) | Antagonistic effects |
| St John's wort, saw palmetto | Iron | Tannic acid content of herbs may limit iron absorption |
| Kelp | Thyroxine | Iodine content of herb may interfere with thyroid replacement |
| Liquorice | Spironolactone | Antagonism of diuretic effect |
| Karela, ginseng | Insulin, sulphonylureas, biguanides | Altered glucose concentrations. These herbs should not be prescribed in diabetic patients |

Data from: Miller LG. Herbal medicinals: selected clinical considerations focusing on known or potential drug-herb interactions. *Arch Intern Med* 1998;158:2200-11

## Practitioners

Herbalists generally work as sole practitioners or in complementary medicine clinics. Few have conventional healthcare qualifications. There seems to have been little penetration of herbal medicine into the NHS. A small number of doctors practise herbalism, but this is often not integrated into their NHS work. Some ethnic groups have their own indigenous herbal practitioners, such as Hakims or Ayurvedic practitioners from the Indian subcontinent.

**Training**

There are many different courses in herbalism and substantial variation in the content and standard of teaching. The most comprehensively trained practitioners are known as medical herbalists and are members of the National Institute of Medical Herbalists (NIMH). Their training usually includes at least 500 hours of supervised clinical practice and training in nutrition, communication skills, pharmacology, pharmacognosy, botany, pathology, conventional clinical diagnosis, biochemistry, physiology, and research skills. Courses last the equivalent of four years full time and lead to BSc degrees in herbal medicine.

Training in Chinese herbalism may be additional to a training in acupuncture or may stand on its own. Some British courses involve student placement in China.

Courses in herbal medicine for doctors range from two day introductions to two year programmes leading to a diploma in herbal medicine.

**Regulation**

The National Institute of Medical Herbalists was set up in 1864 and remains the main registering and regulating body for Western herbal practitioners. Only graduates of approved courses are accepted on to the register, and a strict code of ethics is maintained.

The Register of Chinese Herbal Practitioners accepts graduates from four main British colleges of Chinese herbal medicine. There is no generally accepted British register for practitioners who qualified in China.

The European Herbal Practitioners Association, an umbrella body with about 1000 members, has been set up to encourage greater unity among herbalists. However, it has no formal criteria for screening membership and no published code of ethics as yet.

The ABC of complementary medicine is edited and written by Catherine Zollman and Andrew Vickers. Catherine Zollman is a general practitioner in Bristol, and Andrew Vickers will shortly take up a post at Memorial Sloan-Kettering Cancer Center, New York. At the time of writing, both worked for the Research Council for Complementary Medicine, London. The series will be published as a book in spring 2000.

*BMJ* 1999;319:1050-3

Many herbal prescriptions are individually formulated and dispensed by herbal practitioners themselves

**Main regulatory and registering bodies in herbal medicine**

**National Institute of Medical Herbalists (NIMH)**
56 Longbrook Street, Exeter EX4 6AH. Tel: 01392 426022.
Fax: 01392 498963. Email: nimh@ukexeter.freeserve.co.uk
URL: www.btinternet.com/~nimh/

**Register of Chinese Herbal Medicine**
PO Box 400, Wembley, Middlesex HA9 9NZ. Tel: 0171 470 8740
URL: www.rchm.co.uk

**European Herbal Practitioners Association**
Midsummer Cottage Clinic, Nether Westcote, Chipping Norton OX7 6SD. Tel: 01993 830419. Fax: 01993 830957
URL: www.users.globalnet.co.uk/~epha/

**Further reading**


- Mills S. *The essential book of herbal medicine*. London: Arkana, 1993.
- Newall CA, Anderson LA, Phillipson JD. *Herbal medicines. a guide for health-care professionals*. London: Pharmaceutical Press, 1996


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*One hundred years ago*

### Some hiding places of the tubercle bacillus

We now know pretty well how to fight the tubercle bacillus in the open, but we are only gradually learning the infinite variety of ambush in which it may lie in wait for us. For instance, although the cigarette has an indifferent reputation among sanitarians, the cigar has hitherto been looked upon rather as a safeguard than a source of infection. There appears, however, to be some reason to suspect that this good character is undeserved. The United States Sanitary Commissioner at Constantinople, in a recent report to Surgeon-General Wyman, of the United States Marine Hospital Service, says that the sanitary officer at Cavalla has been much impressed by the spread of tuberculosis among the workmen in the tobacco factories there. In order that the special qualities for which it is so highly prized may not be lost, Turkish tobacco should be exposed to the air as little as possible; consequently, in the course of its manufacture into cigars, no circulation of air is allowed in the workrooms. These rooms, besides being ill ventilated, are damp; the workmen are crowded in them and inhale all the dust caused by the manipulation of the herb. They sleep in the room, and are poorly clad and insufficiently fed. Bronchitis is universal, tuberculosis very common among them, and they spit all about the rooms.

(*BMJ* 1899;ii:1625)